

Development of Data Collection/ Reporting Process

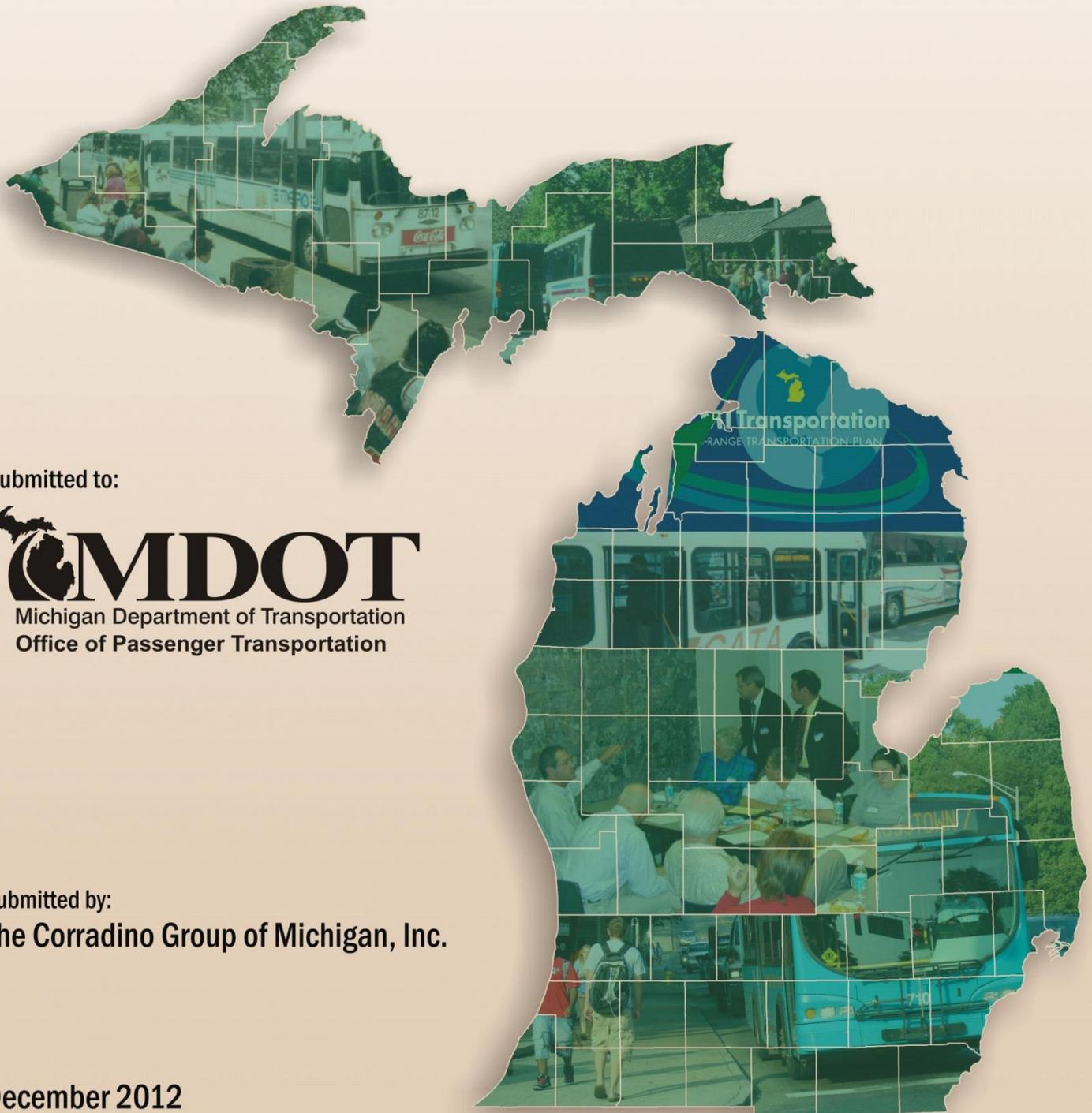
Condition of the Transit System in Michigan

Submitted to:



Submitted by:
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Executive Summary

The purpose of this project was to develop an annual data collection/reporting process to determine the condition of the transit system in the State of Michigan. The development of this data collection/reporting process is in response to a study completed in April 2010 by MDOT, representatives from the Michigan transit industry and transit stakeholders. The focus of the initial study was to identify measures based on the goals in Michigan’s State Long Range Plan (MI Transportation Plan) that could be used to determine and report the overall (statewide) condition of Michigan transit.

The 2010 study resulted in the selection of 23 separate (but often inter-related) Action Intent of Measures (AIMs) for determining the condition of Michigan’s transit system. Each AIM defines how the transit system will meet the respective goal (Figure S-1).

The 2010 team identified if the data needed to support each AIM was already being collected and reported to either the Office of Public Transportation through its Public Transportation Management System (PTMS) or to the Federal Transit Administration (FTA) through the National Transit Database (NTD).

The AIMs and measures were a starting point in determining how to set up a new data collection/reporting process. The scope of work included reviewing the AIMs with the project steering committee and revising the list of measures for which data would be collected; reviewing data collection methodologies and selecting the most appropriate; collecting the data; reporting the results; and documenting the methodology so that the process could be replicated annually.

Various data collection methods were considered and researched. These included integrating additional questions into PTMS, using an online survey application being developed by the National Rural Transportation Assistance Program (RTAP), and using a readily available online survey application such as SurveyMonkey.

Initially it appeared logical to expand PTMS to include data collection for the system condition measures. However, given the difficulty associated with programming new questions into PTMS and the difficulty of reporting data from PTMS, it was determined that a more flexible method should be used until the questions and format are finalized and worked into PTMS. Several data collection cycles are anticipated to finalize the set of questions and data requests.

Figure S-1
System Condition Measurement Structure



An online application was selected for the short term. The online application was being developed by RTAP and would be available through the RTAP Cloud. This application, Dynamic Forms, is still in the development phase and was not available for use during MDOT's initial data collection of system condition measures. RTAP representatives indicate it will be available for the next data collection cycle. SurveyMonkey, an online survey application, was used for the first year's data collection. Michigan's 78 transit agencies were surveyed during June and July of 2011.

The data collected was summarized to provide results at the state level. The data is not intended to be used to compare one system to another, although systems may compare themselves to the state results for planning and system improvement purposes. The AIMs and associated definitions, standards, and status for each of the Michigan Transportation Plan Goals are shown in Table S-1. The status reflects the data collected for FY 2011 from the 78 transit agencies. Many of the standards require comparison of the data to that of a previous year. For the data items for which a status can be currently measured, Michigan's transit system is in a good position to progress and attain the identified standard.

**Table S-1
System Condition Measures and Status – FY 2011**

GOAL 1	
Stewardship: Preserve transportation system investments, protect the environment, and utilize public resources in a responsible manner.	
AIM 1 Preserve existing level of local transit, including specialized service.	
Measure	Statewide passengers, miles and hours.
Definition	Annual statewide passengers, revenue miles and revenue hours as collected through PTMS.
Standard	For all three measures, maintain the same level as the previous year.
Status	For FY 2011, 99,729,926 passengers, 95,162,773 miles, and 6,327,381 hours compared with an increase in passengers from 96,896,493 in FY 2010, a slight decrease in miles from 95,554,816 miles, and an increase in hours up from 6,174,203.
AIM 2 Maintain condition of fleet.	
Measure	Percent of fleet over useful life.
Definition	Useful life as defined by the FTA for each specific vehicle type.
Standard	Less than 20 percent of the fleet operating past the FTA specified useful life.
Status	33 percent of the fleet past useful life
AIM 3 Utilize asset management.	
Measure	Percent of agencies that use an asset management system to address capital needs.
Definition	An asset management system consists of: 1) inventory of capital assets; 2) assess improvements needed for each asset, when they will be needed, and cost; 3) identify capital budget; and, 4) prioritization process.
Standard	Increase the percentage of agencies that use an asset management system to address capital needs.
Status	24.4 percent of agencies used an asset management system to address capital needs
GOAL 2	
Safety and Security: Continue to improve transportation safety and ensure the security of the transportation system.	
AIM 4 Minimize the collision rate.	
Measure	NTD collisions and PTMS statistics as available for agencies that are not required to complete NTD reporting.
Definition	A transit vehicle collision in which there is: a transit vehicle collision with an object where the transit vehicle strikes an obstacle other than a vehicle or person; a transit vehicle collision with a person where the transit vehicle strikes an individual (includes suicides and attempted suicides); a transit vehicle collision with a vehicle where the transit vehicle strikes or is struck by another vehicle; or, an accident not involving a transit vehicle if it occurs on transit property, such as a private automobile collision with an object or a person on transit property. The rate is calculated as collisions per 100,000 vehicle miles.
Standard	A reduction in the collision rate from the previous year.
Status	An MDOT collected measure – no status currently available.
AIM 5 Participation in ongoing training activities	
Measure	MDOT will work with the Training Oversight Committee to develop a minimum standard training plan which will serve as the measure.
Definition	A training plan that meets or exceeds the minimum standards to be defined by the Training Oversight Committee.
Standard	No standard yet, but likely to be 100 percent with minimum plan requirement. A minimum standard training plan will have to be developed first.
Status	No measure, definition or minimum standard has been developed. Data was collected on the number of systems that had training requirements for drivers, dispatchers, managers and mechanics.

Table S-1 (continued)
System Condition Measures and Status – FY 2011

GOAL 3	
System Improvement: Modernize and enhance the transportation system to improve mobility and accessibility.	
AIM 6 Implement ITS/Technology projects to improve efficiency, reliability, and customer satisfaction.	
Measure	Percent of systems that have an ITS/Technology plan and progress toward implementation.
Definition	Systems that have a documented ITS/Technology plan and are working on implementation.
Standard	Increase annually the number of systems with an ITS/Technology plan and that are working toward implementation.
Status	23.1 percent of agencies had an ITS/technology plan and 8.3 percent of systems that had a plan were making progress toward implementation during FY 2011.
AIM 7 Examine and structure services to provide maximum mobility relative to changing demographics and trip generator locations.	
Measure	Percent of systems that have completed a documented service assessment in the past year.
Definition	A service assessment is one that is documented. It includes a review of service area characteristics such as land uses, demographics and trip generators relative to the services being provided.
Standard	100 percent of systems perform a documented service assessment annually.
Status	19.1 percent of agencies had completed a documented service assessment during the reporting period.
AIM 8 Assess customer satisfaction (minimum level).	
Measure	Percent of systems that have a documented process to accept and address customer input.
Definition	A written procedure that governs how an agency will accept and address customer input.
Standard	100 percent of systems in compliance.
Status	53.8 percent of systems had a formal (written) procedure to accept and address customer input, although all agencies accepted customer input in some form.
AIM 9 Assess customer satisfaction (high level).	
Measure	Percent of systems that conduct a customer satisfaction survey at least once every three years.
Definition	Onboard, mailed or online customer satisfaction survey.
Standard	100 percent of systems in compliance.
Status	35.9 percent of systems had completed a customer satisfaction survey in the past three years.
AIM 10 Expand/improve existing services.	
Measure	Change in annual revenue miles of service and annual revenue hours of service.
Definition	Annual statewide revenue miles and revenue hours as collected through PTMS.
Standard	Increase both measures from the previous year.
Status	In FY 2011, miles decreased to 95,162,773 from 95,554,816 miles in FY 2010 and hours increased to 6,327,381 from 6,174,203 in FY 2010.
AIM 11 Increase coordination of transportation options.	
Measure	Percent of agencies that participated in at least one formal meeting each year with other providers to discuss local coordination that includes other forms of transportation.
Definition	A formal meeting is one that is scheduled in advance.
Standard	100 percent of agencies should participate in at least one meeting annually.
Status	60.3 percent of agencies participated in a formal meeting with other transportation providers to discuss local coordination efforts during the reporting period.

Table S-1 (continued)
System Condition Measures and Status – FY 2011

GOAL 4	
Efficient and Effective Operations: Improve the efficiency and effectiveness of the transportation system and transportation services and expand MDOT's coordination and collaboration with partners.	
AIM 12 Provide efficient and effective public transportation services through a range of agency determined performance measures.	
Measure	Percent of agencies that have a documented performance measurement system.
Definition	Documented performance measurement system is in written format and assesses the efficiency and productivity of each route or type of service provided.
Standard	100 percent of agencies have documented performance measurement systems.
Status	82.1 percent of agencies have a documented performance measurement system.
AIM 13 Maximize the statewide benefit/cost of public transit.	
Measure	Statewide benefit/cost ratio.
Definition	Benefit/cost using Michigan's Transit Economic Benefits Model.
Standard	Statewide positive benefit/cost ratio.
Status	MDOT will calculate.
AIM 14 Increase the percentage of systems that use the Transit Economic Benefits Model prior to making significant new investments.	
Measure	Percent of agencies that performed the analysis locally prior to making a significant new investment.
Definition	Agencies performing the analysis with documented results.
Standard	Increase the percentage of agencies using the Transit Economic Benefits Model prior to making a significant new investment.
Status	21.8 percent of the agencies had run the Transit Economic Benefits Model and obtained documented results. None had used the model to make a significant investment decision although 6 systems had used it as part of a millage campaign.
AIM 15 Ensure coordination with nonprofit and social service agencies, the private sector, and educational institutions to enhance access to service.	
Measure	Percent of agencies that conduct formal meetings with stakeholders.
Definition	A formal meeting is one that is scheduled in advance.
Standard	100 percent of agencies conduct at least one stakeholder meeting annually.
Status	39.7 percent of agencies had conducted a formal stakeholders meeting during the reporting period.
AIM 16 Encourage/seek private investment.	
Measure	Number of private entities investing in transit.
Definition	Any financial or in-kind investment from a private entity.
Standard	Increase the number of private investments annually.
Status	25.6 percent of agencies indicated one or more private entities had invested in their agency. Further clarification of these numbers indicated a significant number of responses were in error and the data could not be validated.

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1. Introduction

The purpose of this project was to develop an annual data collection/reporting process to determine the condition of the transit system in the State of Michigan. The development of this data collection/reporting process is in response to a study completed in April 2010 by MDOT, representatives from the Michigan transit industry and transit stakeholders. The focus of the initial study was to identify measures based on the goals in Michigan’s State Long Range Plan (MI Transportation Plan) that could be used to determine and report the overall (statewide) condition of Michigan transit.

The 2010 study resulted in the selection of 23 separate (but often inter-related) Action Intent of Measures (AIMs) for determining the condition of Michigan’s transit system. Each AIM defines how the transit system will meet the respective goal (Figure 1-1). Table 1-1 is from the April 2010 final report and shows how all 23 AIMs relate to the MI Transportation goals of stewardship, safety and security, system improvement, and efficient and effective operations.

The 2010 team identified if the data needed to support each AIM was already being collected and reported to either the Office of Public Transportation through its Public Transportation Management System (PTMS) or to the Federal Transit Administration (FTA) through the National Transit Database (NTD). As indicated in Table 1-1, data was being collected and reported for only a small number of the AIMS.

Figure 1-1
System Condition Measurement Structure



The AIMS and measures listed in Table 1-1 were a starting point in determining how to set up a new data collection/reporting process. The scope of work included reviewing the AIMS with the project steering committee and revising the list of measures for which data would be collected; reviewing data collection methodologies and selecting the most appropriate; collecting the data; reporting the results; and documenting the methodology so that the process could be replicated annually.

Table 1-1
Approved System Condition Measures – 2010

GOAL 1	
Stewardship: Preserve transportation system investments, protect the environment, and utilize public resources in a responsible manner.	
Area 1: Local Transit Service Preservation	
AIM 1-1 Preserve existing level of local transit, including specialized service.	
Measure	Statewide passengers, miles and hours.
Definition	Annual statewide passengers, revenue miles and revenue hours as collected through PTMS.
Standard	For all three measures, maintain the same level as the previous year.
Status	Statewide passengers in 2008 were 101,256,408; miles were 101,037,008 and hours were 6,421,073. All three indicators increased from the previous year (7.24% for passengers, 7.34% for miles and 3.30% for hours).
Area 2: Environmental Protection	
AIM 2-1 Green the fleet, i.e. green vehicles.	
Measure	Percentage of the fleet that is environmentally friendly.
Definition	Vehicles that run on fuel other than "traditional" petroleum fuels, such as, electric, hybrids, solar powered, biofuels, and vehicles that run on Compressed Natural Gas (CNG) or have emission reduction technologies.
Standard	Increase the percentage of green vehicles in the fleet.
Status	
AIM 2-2 Participation in green operational initiatives.	
Measure	Participation in recycling/reusing or other green operational initiatives.
Definition	Self-certification of green initiatives.
Standard	Increase the number of green initiatives annually.
Status	
AIM 2-3 Promote green initiatives in facilities construction and renovation.	
Measure	Green facilities constructed, green improvements to buildings.
Definition	Facilities and improvements that maximize operational efficiencies while minimizing environmental impacts. Focus should be on the five key Leadership in Environmental Engineering & Design (LEED) areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.
Standard	Increase annually the number of facility construction or renovation projects using green construction or renovation methods.
Status	
Area 3: Efficient Use of Resources	
AIM 3-1 Ensure the state's financial investment in public transportation is used in the most efficient way possible.	
Measure	Number of joint purchases of goods or services.
Definition	Systems that participate in joint purchases of goods or services with another agency. The other agency can be a transit agency or a non-transit agency.
Standard	Increase the number of joint purchases annually.
Status	
Area 4: Infrastructure Condition	
AIM 4-1 Maintain condition of fleet.	
Measure	Percent of fleet over useful life.
Definition	Useful life as defined by the FTA for each specific vehicle type.
Standard	Less than 20 percent of the fleet operating past the FTA specified useful life.
Status	

Table 1-1 (continued)
Approved System Condition Measures – 2010

AIM 4-2 Utilize asset management.	
Measure	Percent of agencies that use an asset management system to address capital needs.
Definition	An asset management system consists of: 1) inventory of capital assets; 2) assess improvements needed for each asset, when they will be needed, and cost; 3) identify capital budget; and, 4) prioritization process.
Standard	Increase the percentage of agencies that use an asset management system to address capital needs.
Status	
AIM 4-3 Maintain condition of facilities.	
Measure	Percent of agencies in compliance with facility maintenance plans.
Definition	Agencies that are in compliance with the required facility maintenance plan.
Standard	100 percent of agencies in compliance with their facility maintenance plan.
Status	
GOAL 2	
Safety and Security: Continue to improve transportation safety and ensure the security of the transportation system.	
Area 1: Crime Prevention	
AIM 1-1 Reduce the incidence of crime on transit property.	
Measure	Number of reported crimes on transit property.
Definition	A reported crime is considered to be a crime as reported to the FTA via the Reportable Incident Report form S&S-40. S&S-40 is part of the NTD Safety and Security reporting section.
Standard	A reduction in the incidence of crime on transit property from the previous year.
Status	
Area 2: Accidents	
AIM 2-1 Minimize the collision rate.	
Measure	NTD collisions and PTMS statistics as available for agencies that are not required to complete NTD reporting.
Definition	A transit vehicle collision in which there is: a transit vehicle collision with an object where the transit vehicle strikes an obstacle other than a vehicle or person; a transit vehicle collision with a person where the transit vehicle strikes an individual (includes suicides and attempted suicides); a transit vehicle collision with a vehicle where the transit vehicle strikes or is struck by another vehicle; or, an accident not involving a transit vehicle if it occurs on transit property, such as a private automobile collision with an object or a person on transit property. The rate is calculated as collisions per 100,000 vehicle miles.
Standard	A reduction in the collision rate from the previous year.
Status	
Area 3: Preventive Maintenance	
AIM 3-1 Ensure a well-maintained fleet to reduce accidents from mechanical failure.	
Measure	Percent of agencies in compliance with the preventive maintenance plan.
Definition	Agencies that are in compliance with the required preventive maintenance plan.
Standard	100 percent of agencies in compliance with the preventive maintenance plan.
Status	
Area 4: Continuing Training for Transit Operators	
AIM 4-1 Participation in ongoing training activities.	
Measure	MDOT will work with the Training Oversight Committee to develop a minimum standard training plan which will serve as the measure.
Definition	A training plan that meets or exceeds the minimum standards to be defined by the Training Oversight Committee.
Standard	No standard yet, but likely to be 100 percent with minimum plan requirement. A minimum standard training plan will have to be developed first.
Status	MDOT is working with the transit industry to develop these standards over the next year.

Table 1-1 (continued)
Approved System Condition Measures – 2010

Area 5: Participation in Local Emergency Management and Homeland Security	
AIM 5-1 Participate in emergency plans.	
Measure	Percent of systems included in the local emergency management plans.
Definition	Percent of systems that are referenced in local emergency management plans.
Standard	100 percent of systems included in a local emergency management plan.
Status	
GOAL 3	
System Improvement: Modernize and enhance the transportation system to improve mobility and accessibility.	
Area 1: Modernize Operations	
AIM 1-1 Implement ITS/Technology projects to improve efficiency, reliability, and customer satisfaction.	
Measure	Percent of systems that have an ITS/Technology plan and progress toward implementation.
Definition	Systems that have a documented ITS/Technology plan and are working on implementation.
Standard	Increase annually the number of systems with an ITS/Technology plan and that are working toward implementation.
Status	
AIM 1-2 Increase use of mobility management.	
Measure	Percent of systems offering mobility management services.
Definition	Systems with a mobility manager or that offer some type of mobility management service.
Standard	Increase annually the number of systems with mobility management services.
Status	
Area 2: Planning for Local Change	
AIM 2-1 Examine and structure services to provide maximum mobility relative to changing demographics and trip generator locations.	
Measure	Percent of systems that have completed a documented service assessment in the past year.
Definition	A service assessment is one that is documented. It includes a review of service area characteristics such as land uses, demographics and trip generators relative to the services being provided.
Standard	100 percent of systems perform a documented service assessment annually.
Status	
AIM 2-2 Assess customer satisfaction (minimum level).	
Measure	Percent of systems that have a documented process to accept and address customer input.
Definition	A written procedure that governs how an agency will accept and address customer input.
Standard	100 percent of systems in compliance.
Status	
AIM 2-3 Assess customer satisfaction (high level).	
Measure	Percent of systems that conduct a customer satisfaction survey at least once every three years.
Definition	Onboard, mailed or online customer satisfaction survey.
Standard	100 percent of systems in compliance.
Status	
Area 3: Enhanced Connectivity and Access to and within the Local Transit System and between Other Forms of Transportation	
AIM 3-1 Expand/improve existing services.	
Measure	Change in annual revenue miles of service and annual revenue hours of service.
Definition	Annual statewide revenue miles and revenue hours as collected through PTMS.
Standard	Increase both measures from the previous year.
Status	

Table 1-1 (continued)
Approved System Condition Measures – 2010

AIM 3-2 Increase coordination of transportation options.	
Measure	Percent of agencies that participated in at least one formal meeting each year with other providers to discuss local coordination that includes other forms of transportation.
Definition	A formal meeting is one that is scheduled in advance.
Standard	100 percent of agencies should participate in at least one meeting annually.
Status	
AIM 3-3 Modernize bus stops and shelters to meet Americans with Disabilities Act (ADA) requirements.	
Measure	Percent of designated or scheduled ADA compliant stops and shelters.
Definition	Stops and shelters that meet ADA requirements per 28 CFR Part 36: ADA Standards for Accessible Design.
Standard	Increase annually the percentage of stops and shelters that are ADA compliant.
Status	
GOAL 4	
Efficient and Effective Operations: Improve the efficiency and effectiveness of the transportation system and transportation services and expand MDOT's coordination and collaboration with partners.	
Area 1: Efficient and Effective Transportation Services	
AIM 1-1 Provide efficient and effective public transportation services through a range of agency determined performance measures.	
Measure	Percent of agencies that have documented performance assessments.
Definition	A documented performance assessment is in written format and assesses the efficiency and productivity of each route or type of service provided.
Standard	100 percent of agencies perform a service assessment annually.
Status	
AIM 1-2 Maximize the statewide benefit/cost of public transit.	
Measure	Statewide benefit/cost ratio.
Definition	Benefit/cost using Michigan's Transit Economic Benefits Model.
Standard	Statewide positive benefit/cost ratio.
Status	Baseline results from the initial run of the model.
AIM 1-3 Increase the percentage of systems that use the Transit Economic Benefits Model prior to making significant new investments.	
Measure	Percent of agencies that performed the analysis locally prior to making a significant new investment.
Definition	Agencies performing the analysis with documented results.
Standard	Increase the percentage of agencies using the Transit Economic Benefits Model prior to making a significant new investment.
Status	
Area 2: Stakeholder Coordination	
AIM 2-1 Ensure coordination with nonprofit and social service agencies, the private sector, and educational institutions to enhance access to service.	
Measure	Percent of agencies that conduct formal meetings with stakeholders.
Definition	A formal meeting is one that is scheduled in advance.
Standard	100 percent of agencies conduct at least one stakeholder meeting annually.
Status	

Table 1-1 (continued)
Approved System Condition Measures – 2010

Area 3: Encourage Public/Private Partnerships	
AIM 3-1 Encourage adopt-a-shelter program.	
Measure	Number of adopt-a-shelter programs.
Definition	A formal written adopt-a-shelter program with a signed agreement of responsibilities.
Standard	Increase the number of adopt-a-shelter programs annually.
Status	
AIM 3-2 Encourage/seek private investment.	
Measure	Number of private entities investing in transit.
Definition	Any financial or in-kind investment from a private entity.
Standard	Increase the number of private investments annually.
Status	

2. Review and Revisions

The starting point for the data collection process was the list of 23 AIMs and measures as shown in Table 1-1. Before determining a data collection methodology, the AIMs and measures were reviewed and where necessary revised. It was important that the measures were:

- Trackable over time;
- Meaningful for the types of service measured;
- Related to the statewide public transportation goals; and,
- Supportable through data that exists and can be collected.

A project kick-off meeting was held on November 21, 2011. All of the Michigan public transit agencies were invited to participate via webinar. An initial project steering committee was established. It held its first meeting directly after the webinar. A list of steering committee members can be found in Appendix A. A second steering committee meeting was held in December 2011 to further refine the list. The 23 AIMs and measures were grouped into three categories: keep, wait, and eliminate. A copy of this list is in Appendix B. Data for the measures on the keep list would be collected, those in the wait category would be retained for consideration in future years, and those measures eliminated would not be retained for consideration in future years.

It was decided that 16 measures would be carried forward for consideration. They are shown in Table 2-1. Many of the measures that were eliminated or were set aside for future consideration were measures that were difficult to quantify. These included measures for AIMs such as:

- Green the fleet;
- Participation in green initiatives;
- Promote green facilities initiatives;
- Ensure efficient use of state's financial investment;
- Maintain condition of facilities;
- Reduce the incidence of crime;
- Ensure a well-maintained fleet;
- Participate in emergency plans;
- Increase use of mobility management;
- Modernize stops and shelters; and,
- Encourage private investment.

Table 2-1
Revised System Condition Measures – 2012

GOAL 1	
Stewardship: Preserve transportation system investments, protect the environment, and utilize public resources in a responsible manner.	
AIM 1 Preserve existing level of local transit, including specialized service.	
Measure	Statewide passengers, miles and hours.
Definition	Annual statewide passengers, revenue miles and revenue hours as collected through PTMS.
Standard	For all three measures, maintain the same level as the previous year.
AIM 2 Maintain condition of fleet.	
Measure	Percent of fleet over useful life.
Definition	Useful life as defined by the FTA for each specific vehicle type.
Standard	Less than 20 percent of the fleet operating past the FTA specified useful life.
AIM 3 Utilize asset management.	
Measure	Percent of agencies that use an asset management system to address capital needs.
Definition	An asset management system consists of: 1) inventory of capital assets; 2) assess improvements needed for each asset, when they will be needed, and cost; 3) identify capital budget; and, 4) prioritization process.
Standard	Increase the percentage of agencies that use an asset management system to address capital needs.
GOAL 2	
Safety and Security: Continue to improve transportation safety and ensure the security of the transportation system.	
AIM 4 Minimize the collision rate.	
Measure	NTD collisions and PTMS statistics as available for agencies that are not required to complete NTD reporting.
Definition	A transit vehicle collision in which there is: a transit vehicle collision with an object where the transit vehicle strikes an obstacle other than a vehicle or person; a transit vehicle collision with a person where the transit vehicle strikes an individual (includes suicides and attempted suicides); a transit vehicle collision with a vehicle where the transit vehicle strikes or is struck by another vehicle; or, an accident not involving a transit vehicle if it occurs on transit property, such as a private automobile collision with an object or a person on transit property. The rate is calculated as collisions per 100,000 vehicle miles.
Standard	A reduction in the collision rate from the previous year.
AIM 5 Participation in ongoing training activities	
Measure	MDOT will work with the Training Oversight Committee to develop a minimum standard training plan which will serve as the measure.
Definition	A training plan that meets or exceeds the minimum standards to be defined by the Training Oversight Committee.
Standard	No standard yet, but likely to be 100 percent with minimum plan requirement. A minimum standard training plan will have to be developed first.
GOAL 3	
System Improvement: Modernize and enhance the transportation system to improve mobility and accessibility.	
AIM 6 Implement ITS/Technology projects to improve efficiency, reliability, and customer satisfaction.	
Measure	Percent of systems that have an ITS/Technology plan and progress toward implementation.
Definition	Systems that have a documented ITS/Technology plan and are working on implementation.
Standard	Increase annually the number of systems with an ITS/Technology plan and that are working toward implementation.
AIM 7 Examine and structure services to provide maximum mobility relative to changing demographics and trip generator locations.	
Measure	Percent of systems that have completed a documented service assessment in the past year.
Definition	A service assessment is one that is documented. It includes a review of service area characteristics such as land uses, demographics and trip generators relative to the services being provided.
Standard	100 percent of systems perform a documented service assessment annually.

Table 2-1 (continued)
Revised System Condition Measures – 2012

AIM 8 Assess customer satisfaction (minimum level).	
Measure	Percent of systems that have a documented process to accept and address customer input.
Definition	A written procedure that governs how an agency will accept and address customer input.
Standard	100 percent of systems in compliance.
AIM 9 Assess customer satisfaction (high level).	
Measure	Percent of systems that conduct a customer satisfaction survey at least once every three years.
Definition	Onboard, mailed or online customer satisfaction survey.
Standard	100 percent of systems in compliance.
AIM 10 Expand/improve existing services.	
Measure	Change in annual revenue miles of service and annual revenue hours of service.
Definition	Annual statewide revenue miles and revenue hours as collected through PTMS.
Standard	Increase both measures from the previous year.
AIM 11 Increase coordination of transportation options.	
Measure	Percent of agencies that participated in at least one formal meeting each year with other providers to discuss local coordination that includes other forms of transportation.
Definition	A formal meeting is one that is scheduled in advance.
Standard	100 percent of agencies should participate in at least one meeting annually.
GOAL 4	
Efficient and Effective Operations: Improve the efficiency and effectiveness of the transportation system and transportation services and expand MDOT's coordination and collaboration with partners.	
AIM 12 Provide efficient and effective public transportation services through a range of agency determined performance measures.	
Measure	Percent of agencies that have documented performance assessments.
Definition	A documented performance assessment is in written format and assesses the efficiency and productivity of each route or type of service provided.
Standard	100 percent of agencies perform a service assessment annually.
AIM 13 Maximize the statewide benefit/cost of public transit.	
Measure	Statewide benefit/cost ratio.
Definition	Benefit/cost using Michigan's Transit Economic Benefits Model.
Standard	Statewide positive benefit/cost ratio.
AIM 14 Increase the percentage of systems that use the Transit Economic Benefits Model prior to making significant new investments.	
Measure	Percent of agencies that performed the analysis locally prior to making a significant new investment.
Definition	Agencies performing the analysis with documented results.
Standard	Increase the percentage of agencies using the Transit Economic Benefits Model prior to making a significant new investment.
AIM 15 Ensure coordination with nonprofit and social service agencies, the private sector, and educational institutions to enhance access to service.	
Measure	Percent of agencies that conduct formal meetings with stakeholders.
Definition	A formal meeting is one that is scheduled in advance.
Standard	100 percent of agencies conduct at least one stakeholder meeting annually.
AIM 16 Encourage/seek private investment.	
Measure	Number of private entities investing in transit.
Definition	Any financial or in-kind investment from a private entity.
Standard	Increase the number of private investments annually.

3. Data Collection Methodology

Various data collection methods were considered and researched. These included integrating additional questions into PTMS, using an online survey application being developed by the National Rural Transportation Assistance Program (RTAP), and using a readily available online survey application such as SurveyMonkey.

All of Michigan's public transit agencies use PTMS on a regular basis to meet certain MDOT reporting requirements. Initially it appeared logical to expand PTMS to include data collection for the system condition measures. However, given the difficulty associated with programming new questions into PTMS and the difficulty of reporting data from PTMS, it was determined that a more flexible method should be used until the questions and format are finalized and worked into PTMS. Several data collection cycles are anticipated to finalize the set of questions and data requests.

For the short term, MDOT staff discussed using an online application being developed by RTAP that would be available through the RTAP Cloud. This application, Dynamic Forms, is still in the development phase and was not available for use during MDOT's initial data collection of system condition measures. The Dynamic Forms application has specialized features beyond those of existing online survey applications. MDOT will have an account on the RTAP Cloud and each transit agency will have its own secure account under the MDOT umbrella. Agencies will be unable to view other agencies' data. They will be able to review and access their own previously submitted data.

It was determined that RTAP's Dynamic Forms application would not be available in time for the initial data collection effort. Therefore, a questionnaire was developed using SurveyMonkey, an online survey application. A copy of the questionnaire is in Appendix C. The steering committee reviewed all questions. In order to collect data that could be quantified and aggregated, it was important to standardize the responses. Questions were generally multiple-choice with very few opportunities for open-ended responses.

On June 1, 2012, the 78 Michigan public transit agencies were emailed a letter from MDOT providing information on the system condition measures initiative and the data collection process. The email included a copy of the online survey for download and printing. It was suggested that the agencies download the questionnaire, review it and complete it on paper for use as a guide when entering the data online. On June 6, 2012, the transit agencies were emailed another letter referencing the June 1 e-mail. The June 6 letter included the link to the online questionnaire. Copies of the two MDOT survey letters are in Appendix D. Data collection continued through July. All 78 agencies completed a questionnaire.

4. Results

The reporting period for data collection was MDOT’s Fiscal Year 2011 (October 1, 2010 through September 30, 2011). All 78 systems responded to the survey. The project steering committee met and reviewed and discussed the data. The following is a review of the data collected.

Fleet

The first question on the survey was about the fleet. The 78 agencies reporting data had 3,402 fleet vehicles (Table 4-1). Of these, 1,122 (33%) were past their useful life as useful life is defined in MDOT’s standards. (MDOT’s definition of useful life by vehicle type was included within the online questionnaire.) The steering committee thought the data were reasonable and was satisfied with the question and the results. There appears to be no need to modify this question for the next data collection period.

**Table 4-1
Fleet Statistics**

Number of vehicles in Active Fleet	3,402
Number of vehicles past useful live per MDOT's requirements	1,122
Percent of the fleet over useful life	33%

Asset Management

Only 19 of the 78 systems used some type of asset management system (Table 4-2): three used a software package, 13 used a spreadsheet, and three used some other type of asset management system (Table 4-3).

**Table 4-2
Do you use an asset management system to address capital needs?**

Response	Number	Percent
Yes	19	24.4
No	59	75.6
Total	78	100.0

**Table 4-3
Is asset management done using a software package, a spreadsheet or by another method?**

Response	Number	Percent
Software Package	3	15.8
Spreadsheet	13	68.4
Other	3	15.8
Total	19	100.0

MDOT staff indicated that they received several inquiries from the agencies regarding this question. Many agencies thought asset management just applied to vehicles and did not consider other capital equipment. The three agencies using a software package were contacted for comment on what software package was used and how well it met their needs, but none responded. Additional follow-up in this area could benefit other systems considering an asset management system.

The 19 agencies using an asset management system were asked when they had last updated their system. The dates ranged from March 2010 through December 2012, indicating some were for a future scheduled update (Table 4-4). The agencies were also asked the date the asset management system was last used to make a decision. These dates were in a range from August 2010 through December 2012 (Table 4-5). Either some agencies entered incorrect data or they entered a date when they thought they would next use the agency's asset management system.

Table 4-4
What is the date of the most recent update of your agency's asset management system?

Date	
03/01/2010	03/12/2012
12/01/2010	03/12/2012
09/01/2011	04/12/2012
09/30/2011	05/12/2012
01/01/2012	06/05/2012
01/12/2012	06/12/2012
01/12/2012	06/12/2012
01/12/2012	11/11/2012
01/15/2012	12/11/2012
03/12/2012	

Table 4-5
What is the date your asset management system was last used to make a decision?

Date	
08/01/2010	03/12/2012
01/01/2012	05/01/2012
01/12/2012	05/01/2012
01/12/2012	05/12/2012
02/12/2012	05/12/2012
02/16/2012	05/12/2012
03/01/2012	06/12/2012
03/01/2012	10/11/2012
03/12/2012	12/11/2012
03/12/2012	

The questions related to asset management could be improved for the next data collection period. More information on asset management and the need to include all types of capital equipment, not just vehicles, could be included in the questionnaire. In terms of the data on the date of update and the last date of use, perhaps it could be noted that a future date is not an acceptable answer.

Training

The questions on training in the survey were included to assist the Training Oversight Committee in developing a minimum standard training plan that would then serve as the measure for assessing transit staff training levels. The agencies were asked if they had specific training requirements for drivers, dispatchers, managers, and mechanics. Most agencies did have training requirements, but nearly 13 percent didn't have training requirements for drivers, 25.6 percent had no training requirements for dispatchers, 53.8 percent had none for managers, and 38.5 percent didn't have training requirements for mechanics (Table 4-6). Follow up calls were made to many of the agencies that indicated they had no training requirements. All that were contacted conducted training for employees but they had no formal training manual or written requirements. The agencies that had some form of training requirements were asked to list them by staff category. These responses can be found in Appendix E.

Table 4-6
Do you have Training Requirements for:

Response	Yes		No		Total
	Number	Percent	Number	Percent	
Drivers	68	87.2	10	12.8	78
Dispatchers	58	74.4	20	25.6	78
Managers	36	46.2	42	53.8	78
Mechanics	48	61.5	30	38.5	78

The series of questions on training will most likely be replaced in the next reporting period by a question related to training standards, once they have been developed by the Training Oversight Committee.

ITS/Technology Plan

A brief description of an ITS/technology plan was provided in the questionnaire along with examples for ITS technologies. Only 18 of the 78 Michigan transit agencies had an ITS/technology plan (Table 4-7). Of these, 15 had implemented at least a part of their plan during the reporting period (Table 4-8). Responders indicated those items they had implemented (Table 4-9). Over half of the agencies (63%) were not sure if they were included in the region's ITS Architecture Plan (Table 4-10).

Table 4-7
Does your agency have an ITS/technology plan?

Response	Number	Percent
Yes	18	23.1
No	60	76.9
Total	78	100.0

Table 4-8
Have you implemented any part of your ITS/technology plan during the reporting period?

Response	Number	Percent
Yes	15	83.3
No	3	16.7
Total	18	100.0

Table 4-9
What did you implement from your ITS/technology plan during the reporting period?

Response
Automated Vehicle Locators Assetworks Fleet Management System
AVL, computer aided dispatch, scheduling ,GIS data management, communication upgrades, new radio system, security upgrades, new cameras
Buses procured in 2004,05 and 10 are equipped with Luminator Voice Annunciators Use of Trapeze as been updated. All vehicles are equipped with mobile digital recorders. Electronic Fareboxes to be installed by October 2012 Facility Access Control and Security Cameras implemented in 2011
Cameras in buses, updated GPS
Computerized Dispatch Services.
Dispatch - Computer Software Upgrade internet speed from DSL to cable.
GPS
New demand/response trip scheduling software located at a remote site. Demand/response service is contracted out to a private firm.
security camera's, and computerized dispatch modules
Upgraded some of the software modules and phone equipment to improve the reliability of our phone and internet based connector trip scheduling.
UPGRADED VEHICLE -ON-BOARD COMPUTER PROGRAM.
We are implementing computer aided dispatch
We completed the onboard camera surveillance project. Aside from other dramatic improvements in camera and recording technology, the new system allows for bus cameras to be viewed remotely.
We have replaced all administration computer with laptops that provide a mobile workplace for those individuals. Also, mobile data terminals and electronic fare boxes will be installed on all buses before September 30, 2012. This will allow for better tracking and routing of the fleet as well provide for option for the riders to pay their fare.
Weather station, security cameras, email alerts for local weather, and local alerts from the Sheriff's Department.

Table 4-10
Is your agency included in your region's ITS Architecture Plan?

Response	Number	Percent
Yes	16	20.5
No	13	16.7
Not Sure	49	62.8
Total	78	100.0

The steering committee discussed the results of the ITS questions and concluded that it is difficult to define what type of activities fall under ITS. There is more emphasis at the state level on the roadway applications of ITS. This is evidenced by the fact that over half the transit agencies did not know if they were included in their region’s ITS Architecture Plan.

Service Assessment

Less than 20 percent of the transit agencies had completed a written service assessment during the reporting period (Table 4-11).

Table 4-11
Has your agency completed a documented (written) service assessment during the reporting period?

Response	Number	Percent
Yes	15	19.2
No	63	80.8
Total	78	100.0

Forty percent of systems made service changes in response to service assessments (Table 4-12). It was realized that the 60 percent of respondents that did make service changes may have been unable to due to funding constraints. A follow-up question could be added to determine why no changes were made.

Table 4-12
Did your services change as a result of your last service assessment?

Response	Number	Percent
Yes	6	40.0
No	9	60.0
Total	15	100.0

The dates for the most recent service assessment ranged from October of 2010 to the (then) present (Table 4-13). As with some of the other date related questions, at least one agency indicted a future date. Additional information on the questionnaire could be added to define an appropriate date range response.

Table 4-13
What was the completion date of your most recent service assessment?

Date	
04/01/2010	02/11/2012
12/20/2010	02/12/2012
07/15/2011	03/12/2012
09/28/2011	04/01/2012
01/01/2012	04/11/2012
01/12/2012	10/01/2012
02/01/2012	in process

The steering committee concluded that they would like to change the time period to three years rather than the one-year reporting period. If after subsequent reporting periods, a considerable number of agencies are not conducting service assessments at least once during a three year period, then perhaps MDOT could provide some guidance on how to conduct a basic service assessment.

Customer Input

All systems appeared to have some means of accepting customer input, regardless of whether they have a formal (written) procedure (Table 4-14). It was determined by the steering committee that the yes/no question on a customer input procedure could be eliminated and the only question needed would be how they accept customer input. The most common means of accepting customer comments was by phone or mail (Table 4-15). The firms indicating other methods of accepting customer input were asked to describe them, leading to an extensive list (Table 4-16). Most agencies respond to customer input when possible, but some is provided anonymously or directly to the driver, and no additional response is required (Table 4-17). Nearly all agencies respond to comments within a week or less (Table 4-18).

Table 4-14
Does your agency have a formal (written) procedure to accept and address customer input?

Response	Number	Percent
Yes	42	53.8
No	36	46.2
Total	78	100.0

Table 4-15
How do you accept customer input?

Response	Number	Percent
Phone	75	96.2
Mail	75	96.2
Suggestion Box	16	20.5
Online Comments	51	65.4
Other	36	46.2

Table 4-16
Other methods of accepting customer input

Response
Board meetings and LAC
Cards on the buses
Comments and suggestions to drivers and customer input from service users attending our Local Advisory/Coordination Committee Meeting.
Comments made in person to transit staff and management.
Complaint form available from driver or dispatcher
Customer Comment Cards available on buses.
Customer Comment cards carried by all drivers; in person.
Customer comment cards on all buses, walk in complaints in person. Periodic customer surveys.
Customer Courtesy Cards in vehicles
Customer Surveys
Driver interaction
Email
e-mail
E-mail address off of Clinton Transit website. Local Advisory Council with 2 passengers and the rest human service agencies.
Email and in person

Table 4-16 (continued)
Other methods of accepting customer input

Response
e-mail, fax
email, via driver or dispatcher/clerk
face to face, e mail,
Forms on all buses for customers to submit comments.
Fully staffed Customer Service Department
In Person
In person
In person
In person
In person or through their representative.
Information from surveys
LAC meetings, riders talking with drivers, and dispatchers.
Livingston County Transportation Coalition
Local Advisory Committee
Mobility Manager
participated in a local chamber customer survey, also have customer feedback forms on every bus
Public comment accepted at all Board and LAC meetings.
Public comment at Board meetings
Public forum at monthly open board meetings.
Public input sessions
Visits in person, meetings with the general public and members of local organizations and governmental bodies.
Walk in and community meetings/presentations
Written correspondence Personal contact Listening Session Online After hours message are left on answering machine. Customer walk-ups at the CTC information booth.

Table 4-17
Does your agency provide a response to all customer input?

Response	Number	Percent
Yes	67	85.9
No	11	14.1
Total	78	100.0

Table 4-18
Generally, how long does it take your agency to provide a response to customer input?

Response	Number	Percent
24 hours or less	42	53.8
A week or less	35	44.9
8 to 30 days	1	1.3
More than 30 days	-	-
Total	78	100.0

Customer Satisfaction Survey

Just over 64 percent of the systems had not conducted a customer satisfaction survey in the past three years (Table 4-19). Most that did conducted the survey on board transit vehicles. Some of the agencies used multiple methods of determining customer satisfaction (Table 4-20). Agencies that perform surveys provided the date of their most recent one (Table 4-21). MDOT could provide some assistance and guidance on conducting customer satisfaction surveys.

Table 4-19
Has your agency conducted a customer satisfaction survey in the past three years?

Response	Number	Percent
Yes	28	35.9
No	50	64.1
Total	78	100.0

Table 4-20
How was your customer satisfaction survey conducted?

Response	Number	Percent
Onboard	26	92.9
Mail	7	25.0
Phone	5	17.9
Online	5	17.9

Table 4-21
What is the date of your most recent customer satisfaction survey?

Date	
08/09/2012	03/10/2012
08/09/2012	12/01/2011
06/12/2012	10/01/2011
06/12/2012	10/01/2011
06/10/2012	10/01/2011
05/12/2012	09/18/2011
05/10/2012	07/15/2011
05/01/2012	03/20/2011
04/12/2012	06/01/2010
04/09/2012	01/01/2010
03/11/2012	12/01/2009
03/11/2012	10/01/2009

Coordination Efforts

Over half the agencies (60.3%) indicated they participated in a formal coordination meeting with other transportation providers during the reporting period (Table 4-22). The steering committee felt this response underreports the level of coordination and noted that a great deal of informal coordination occurs among transit and human service agencies. Some agencies noted they hold LAC meetings and

counted these as coordination meetings. If the intent is to collect information on coordination efforts above and beyond LAC meetings, perhaps the question should be reworded.

Table 4-22
Did your agency participate in a formal meeting (scheduled in advance) with other transportation providers to discuss local coordination efforts during the reporting period?

Response	Number	Percent
Yes	47	60.3
No	31	39.7
Total	78	100.0

Agencies sometimes make changes in service as a result of coordination meetings (Table 4-23). Some coordination requires coordinating policies or pick-up points, not actual changes in service.

Table 4-23
Did you make any changes to your service as a result of the coordination meeting?

Response	Number	Percent
Yes	18	38.3
No	29	61.7
Total	47	100.0

Some agencies listed coordination meetings that were outside of the reporting period (Table 4-24). With this and all date-related questions, a reminder of the reporting period should be added to the question. The agencies were asked to briefly describe the coordination meetings. These descriptions can be found in Appendix F.

Table 4-24
What was the date of the coordination meeting?

Date	
this spring 2012	05/17/2012
Several times throughout the year	05/01/2012
several dates	05/01/2012
Monthly	03/26/2012
Many	03/13/2012
3/2012 and 5/2012	03/13/2012
3/2012 and 4/2012	02/14/2012
12/11/2012	02/03/2012
07/17/2012	02/01/2012
07/12/2012	01/26/2012
07/12/2012	01/12/2012
07/12/2012	12/01/2011
06/28/2012	09/22/2011
06/28/2012	09/22/2011
06/20/2012	08/27/2011
06/20/2012	08/01/2011
05/31/2012	07/15/2011
05/31/2012	07/01/2011
05/24/2012	06/14/2011
05/23/2012	06/01/2011
05/22/2012	02/01/2011
05/21/2012	04/01/2010
05/18/2012	07/04/1905

Performance Measurement

Most systems (82%) had a documented performance measurement system (Table 4-25). Many systems reported the data in more than one way (hence a total greater than 100%). Most reported performance data at a board meeting or in an annual report. Some agencies reported to county boards such as commissioners (Table 4-26) and some indicated that they reported performance data to MDOT or the National Transit Database (Table 4-27).

Table 4-25
Does your agency have a documented performance measurement system?

Response	Number	Percent
Yes	64	82.1
No	14	17.9
Total	78	100.0

Table 4-26
How do you report performance data?

Response	Number	Percent
At a board meeting	60	76.9
On a website	6	7.7
In an annual report	40	51.3
Other	18	23.1

Table 4-27
Other means of reporting performance data

Response
Annual Audit
City of Detroit Dash Board
CWTA has a quarterly compilation report to review along with the OARs.
I report vehicle miles, passenger count, and lift calls for each month to our City Council, and I provide this information on a quarterly basis to our Local Advisory Committee.
internal with staff
LETS Director prepares all performance measurements and reports annually to the Livingston County Board of Commissioners.
Local Advisory Council and JARC meetings.
MDOT requires it during annual application
Monthly reports for specific data for the staff to see and have input on (mileage, number of trips, etc.).
NTD Reports
On MDOT's PTMS web site.
Our non-financial data is reported to MDOT every quarter....on an annual basis....and a reconciled report.
Passengers/vehicle hour has historically been reported and discussed at Local Advisory Council meetings. We recently developed a comparative spread sheet including several other performance measures; this spread sheet will be provided to the City of Buchanan through its Transportation Coordinator on a quarterly basis.
Performance measurement data are reported through NTD and CATA management.

Table 4-27 (continued)
Other means of reporting performance data

Response
Provide data as requested.
Quarterly and annual reports on MDOT's PTMS system.
Quarterly Report
Report to Board monthly only on ridership activity at this time
Special service accomplishments are frequently reported in our local newspapers.
To employees at training meetings. To community groups when invited to speak. To local municipal councils & boards when requested.
We have PCTrans software, otherwise we primarily use the reporting system in PTMS for these reports. Otherwise, our Fleet Services employee provides the data based on actual expense from maintenance software. We report to the Board of Directors in board packets
We prepare a quarterly report with performance measures

In discussions with the steering committee, it was suggested that the question be modified to exclude the PTMS and National Transit Database reporting process, given that the intent is that the data be somehow reported to a board and used for some other purpose such as system planning.

Over 20 percent of the agencies developed daily performance reports, while monthly reports were the most common (Table 4-28). Although the survey allowed multiple responses, it appears that only a few agencies took that approach. Systems that report performance measures monthly most likely also report them annually as well, but the data here don't support that conclusion as the monthly total exceeds the annual total. The phrase "check all that apply" should be added to this question.

Table 4-28
How often do you measure and report performance data?

Response	Number	Percent
Daily	16	20.5
Weekly	8	10.3
Monthly	51	65.4
Quarterly	29	37.2
Annually	37	47.4
Other	-	-

Transit Economic Benefits Model

MDOT's Office of Public Transportation has developed the Transit Economic Benefits Model that allows assessment of the economic benefits of an individual system or all of the Michigan transit agencies as a group. Individual agencies can use the model to quantify benefits associated with major investments. Agencies were asked if they had run the model and obtained documented results. Seventeen agencies have run the model and obtained results (Table 4-29), most within the past year (Table 4-30). The agencies were split on their reasons for running the model. Just over 35 percent ran the model as part of a millage campaign (Table 4-31). Others wanted to compare their results to the statewide results (47%) or had another reason for running the model (47%). Reasons included public outreach, grant application documentation, planning, and simply to test how it could be applied in the future (Table 4-32).

Table 4-29
Has your agency run the Transit Economic Benefits Model and obtained documented results?

Response	Number	Percent
Yes	17	21.8
No	61	78.2
Total	78	100.0

Table 4-30
When did you last use the Transit Economic Benefits Model?

Date	
09/22/2010	03/12/2012
10/15/2010	04/12/2012
02/01/2011	05/12/2012
04/01/2011	06/01/2012
05/01/2011	06/10/2012
09/01/2011	06/12/2012
01/11/2012	10/10/2012
01/12/2012	

Table 4-31
Why did you use the Transit Economic Benefits Model?

Response	Number	Percent
To make a significant investment decision	-	-
As part of a millage campaign	6	35.3
To compare your agency results to statewide results	8	47.1
Other	8	47.1

Table 4-32
Other reason for using the Transit Economic Benefits Model

Response
I participated in a media roundtable presentation in Kalamazoo, arranged by the MI Public Transit Association, regarding the need for a stable and adequate source of public transportation funding; I represented small transit agencies in the State of Michigan.
In an attempt to evaluate the validity of the model
Ongoing public outreach and education.
The Transit Economic Benefit Model was used for the Alternative Analysis study.
To provide supporting information for a competitive discretionary federal grant application
to see if the TEBM was useful
To see if we can assess the value of a single route. To see if regional service can be assessed by the model.

The steering committee thought more agencies should be using the transit economic benefits model. The Office of Public Transportation should encourage agencies to run the model and perhaps offer more training. Given the existing funding issues, many agencies may not see a need to use the model at this time because they are not currently evaluating transit alternatives or additional investment.

Stakeholders' Meeting

Nearly 40 percent of the transit agencies responded that they had conducted a stakeholder meeting during the reporting period (Table 4-33). Agencies were asked not to count the required Local Advisory Committee meetings as a stakeholder meeting. The agencies were nearly evenly split in terms of making service changes as a result of a stakeholder meeting (Table 4-34). As with the other meeting date related questions, some meeting dates provided were not during the reporting period (Table 4-35). Respondents should be encouraged to provide a valid date through a reminder of the date range. This could change some of the yes responses regarding the meeting to no. Agencies that had conducted a stakeholder meeting were asked to briefly describe the meeting. Meeting descriptions can be found in Appendix F.

Table 4-33

Has your agency conducted a formal meeting (scheduled in advance) with stakeholders during the reporting period? Do not count Local Advisory Committee (LAC) meetings required for your annual application submittal.

Response	Number	Percent
Yes	31	39.7
No	47	60.3
Total	78	100.0

Table 4-34

Did you make any changes to your service as a result of the stakeholder meeting?

Response	Number	Percent
Yes	15	48.4
No	16	51.6
Total	31	100.0

Table 4-35

What was the date of the stakeholder meeting?

Date	
07/03/1905	04/24/2012
12/28/2010	04/25/2012
05/16/2011	05/12/2012
09/21/2011	05/21/2012
09/22/2011	05/22/2012
12/14/2011	06/01/2012
01/12/2012	06/05/2012
01/26/2012	06/07/2012
02/01/2012	06/26/2012
02/07/2012	06/27/2012
03/03/2012	12/11/2012
03/18/2012	Monthly
04/10/2012	more than 50 in past year
04/12/2012	multiple
04/18/2012	

Private Investment

The responses to the question on the survey about private investment were intended to give MDOT a sense of the number of transit related public/private partnerships. Most systems (74.4%) responded that there were no private entities investing in their agency (Table 4-36). Still, there were 20 agencies that reported having one or more private entities invest in their transit agency during the reporting period. Several agencies reporting private investment were contacted to determine the types of private entities that were providing funding. Most agencies could not recall why they indicated one or more private entity investments in their system or did not really understand the question. Often what was listed as private investment was really public investment or investment by a private entity or charitable group in exchange for services. This question should be eliminated or considerable more explanation should be included for the next data collection period.

Table 4-36
How many private entities have invested in your agency during the reporting period?

Response	Number	Percent
None	58	74.4
One	4	5.1
Two	6	7.7
Three	4	5.1
Four	2	2.6
Five	1	1.3
More than Five	3	3.8
Total	78	100.0

General Comments from the Agencies

At the end of the survey form three questions were asked in order to get feedback from the agencies on the reporting process. The questions were in regard to the level of difficulty and effort required to collect the data for the survey, data items that were difficult to accurately report and general comments that would help improve the process in future years. Agencies were not required to submit responses to the last three questions, but some did. The following are some issues raised.

- There was one complaint about the number of closed-ended questions in the survey and that they did not provide for enough explanation of the response. The questions were developed with standardized responses so that the data could be compared, tabulated and analyzed. Most questions had a provision for “Other” if the response did not fit the categories listed. There was always an opportunity to explain a response of “Other.”
- Most respondents did not indicate any difficulty completing the survey, but some did call MDOT staff with questions.
- It was noted that the fleet information could have come from PTMS. This is true for the non-urban systems, but not for the urban systems.
- There were several questions related to the Regional ITS Architecture Plan.

- One agency noted that there was no provision for reporting activities in progress. Given that this will be an annual data collection process, those current activities and improvements can be documented in the next reporting period. A note can be added to that effect.
- There was a suggestion that the MDOT provide some basic software that agencies could use for asset management.
- Why weren't there any questions related to ridership data, revenue sources, etc.? These data can all be collected through PTMS. There is system condition measure related to ridership, but these data will be collected and reported by MDOT through existing programs.

A complete listing of the agency responses to the open-ended comments section can be found in Appendix G.

5. Status of System Condition Measures

The purpose of surveying the transit agencies and collecting the data is so that it can then be put back in the transit system conditions framework to determine the condition of the transit system in Michigan.

Status by AIM

Based on the FY 2011 data collected, the status of some of the measures can be better defined. For some measures, the standard established involves comparing data from the previous reporting period. Table 5-1 contains the measures for each goal area and the AIMS to which they relate.

The measure for AIM 1, preserve existing level of local transit, including specialized service, is statewide passengers, miles and hours. These data items are collected by MDOT on an annual basis through PTMS. As shown, passengers and hours increased while miles decreased. The standard is to maintain all three measures at the previous year's level. Given that passengers increased, it is assumed that the existing level of local transit service was not only preserved, but actually increased.

AIM 2, maintain condition of the fleet is to be measured by the percentage of the fleet over useful life as defined by the FTA. The standard is less than 20 percent of the fleet operating past the FTA specified useful life. The survey data indicated that 33 percent of the fleet was operating past useful life. This is an area in which systems need improvement. MDOT may need to provide additional guidance to the agencies regarding vehicle procurement and also perhaps provide a follow-up question on the next survey to better understand why 33 percent of the fleet is beyond useful life.

The measure for AIM 3, utilize asset management, was defined as the percent of agencies that use an asset management system to address capital needs. The standard defined was increase the percentage of agencies that use an asset management system to address capital needs. The current status based on the data collected for FY 2011, is that 24.4 percent of agencies use an asset management system. It is hoped that this percentage increases in 2012. It was also evident from the responses and inquiries received during the survey that many of the agencies do not fully understand what an asset management system entails. As this may become part of the NTD reporting process as identified in Moving Ahead for Progress in the 21st Century (MAP-21), MDOT may want to provide guidance to agencies; especially those that are required to complete NTD reporting, on how to develop an asset management system.

AIM 4, minimize the collision rate is based on MDOT collected data from NTD and PTMS collision statistics. There is currently no status available for this measure.

AIM 5, participation in ongoing training activities, does not yet have an established measure, definition or standard. Data was collected through the FY 2011 data collection process to determine if agencies had training requirements for drivers, dispatchers, managers and mechanics. This information will be reviewed by the Training Oversight Committee as they develop a minimum standard training plan.

**Table 5-1
System Condition Measures and Status – 2011**

GOAL 1	
Stewardship: Preserve transportation system investments, protect the environment, and utilize public resources in a responsible manner.	
AIM 1 Preserve existing level of local transit, including specialized service.	
Measure	Statewide passengers, miles and hours.
Definition	Annual statewide passengers, revenue miles and revenue hours as collected through PTMS.
Standard	For all three measures, maintain the same level as the previous year.
Status	For FY 2011, 99,729,926 passengers, 95,162,773 miles, and 6,327,381 hours compared with an increase in passengers from 96,896,493 in FY 2010, a slight decrease in miles from 95,554,816 miles, and an increase in hours up from 6,174,203.
AIM 2 Maintain condition of fleet.	
Measure	Percent of fleet over useful life.
Definition	Useful life as defined by the FTA for each specific vehicle type.
Standard	Less than 20 percent of the fleet operating past the FTA specified useful life.
Status	33 percent of the fleet past useful life
AIM 3 Utilize asset management.	
Measure	Percent of agencies that use an asset management system to address capital needs.
Definition	An asset management system consists of: 1) inventory of capital assets; 2) assess improvements needed for each asset, when they will be needed, and cost; 3) identify capital budget; and, 4) prioritization process.
Standard	Increase the percentage of agencies that use an asset management system to address capital needs.
Status	24.4 percent of agencies used an asset management system to address capital needs
GOAL 2	
Safety and Security: Continue to improve transportation safety and ensure the security of the transportation system.	
AIM 4 Minimize the collision rate.	
Measure	NTD collisions and PTMS statistics as available for agencies that are not required to complete NTD reporting.
Definition	A transit vehicle collision in which there is: a transit vehicle collision with an object where the transit vehicle strikes an obstacle other than a vehicle or person; a transit vehicle collision with a person where the transit vehicle strikes an individual (includes suicides and attempted suicides); a transit vehicle collision with a vehicle where the transit vehicle strikes or is struck by another vehicle; or, an accident not involving a transit vehicle if it occurs on transit property, such as a private automobile collision with an object or a person on transit property. The rate is calculated as collisions per 100,000 vehicle miles.
Standard	A reduction in the collision rate from the previous year.
Status	An MDOT collected measure – no status currently available.
AIM 5 Participation in ongoing training activities	
Measure	MDOT will work with the Training Oversight Committee to develop a minimum standard training plan which will serve as the measure.
Definition	A training plan that meets or exceeds the minimum standards to be defined by the Training Oversight Committee.
Standard	No standard yet, but likely to be 100 percent with minimum plan requirement. A minimum standard training plan will have to be developed first.
Status	No measure, definition or minimum standard has been developed. Data was collected on the number of systems that had training requirements for drivers, dispatchers, managers and mechanics.

Table 5-1 (continued)
System Condition Measures and Status – 2011

GOAL 3	
System Improvement: Modernize and enhance the transportation system to improve mobility and accessibility.	
AIM 6 Implement ITS/Technology projects to improve efficiency, reliability, and customer satisfaction.	
Measure	Percent of systems that have an ITS/Technology plan and progress toward implementation.
Definition	Systems that have a documented ITS/Technology plan and are working on implementation.
Standard	Increase annually the number of systems with an ITS/Technology plan and that are working toward implementation.
Status	23.1 percent of agencies had an ITS/technology plan and 8.3 percent of systems that had a plan were making progress toward implementation during FY 2011.
AIM 7 Examine and structure services to provide maximum mobility relative to changing demographics and trip generator locations.	
Measure	Percent of systems that have completed a documented service assessment in the past year.
Definition	A service assessment is one that is documented. It includes a review of service area characteristics such as land uses, demographics and trip generators relative to the services being provided.
Standard	100 percent of systems perform a documented service assessment annually.
Status	19.1 percent of agencies had completed a documented service assessment during the reporting period.
AIM 8 Assess customer satisfaction (minimum level).	
Measure	Percent of systems that have a documented process to accept and address customer input.
Definition	A written procedure that governs how an agency will accept and address customer input.
Standard	100 percent of systems in compliance.
Status	53.8 percent of systems had a formal (written) procedure to accept and address customer input, although all agencies accepted customer input in some form.
AIM 9 Assess customer satisfaction (high level).	
Measure	Percent of systems that conduct a customer satisfaction survey at least once every three years.
Definition	Onboard, mailed or online customer satisfaction survey.
Standard	100 percent of systems in compliance.
Status	35.9 percent of systems had completed a customer satisfaction survey in the past three years.
AIM 10 Expand/improve existing services.	
Measure	Change in annual revenue miles of service and annual revenue hours of service.
Definition	Annual statewide revenue miles and revenue hours as collected through PTMS.
Standard	Increase both measures from the previous year.
Status	In FY 2011, miles decreased to 95,162,773 from 95,554,816 miles in FY 2010 and hours increased to 6,327,381 from 6,174,203 in FY 2010.
AIM 11 Increase coordination of transportation options.	
Measure	Percent of agencies that participated in at least one formal meeting each year with other providers to discuss local coordination that includes other forms of transportation.
Definition	A formal meeting is one that is scheduled in advance.
Standard	100 percent of agencies should participate in at least one meeting annually.
Status	60.3 percent of agencies participated in a formal meeting with other transportation providers to discuss local coordination efforts during the reporting period.

Table 5-1 (continued)
System Condition Measures and Status – 2011

GOAL 4	
Efficient and Effective Operations: Improve the efficiency and effectiveness of the transportation system and transportation services and expand MDOT's coordination and collaboration with partners.	
AIM 12 Provide efficient and effective public transportation services through a range of agency determined performance measures.	
Measure	Percent of agencies that have a documented performance measurement system.
Definition	Documented performance measurement system is in written format and assesses the efficiency and productivity of each route or type of service provided.
Standard	100 percent of agencies have documented performance measurement systems.
Status	82.1 percent of agencies have a documented performance measurement system.
AIM 13 Maximize the statewide benefit/cost of public transit.	
Measure	Statewide benefit/cost ratio.
Definition	Benefit/cost using Michigan's Transit Economic Benefits Model.
Standard	Statewide positive benefit/cost ratio.
Status	MDOT will calculate.
AIM 14 Increase the percentage of systems that use the Transit Economic Benefits Model prior to making significant new investments.	
Measure	Percent of agencies that performed the analysis locally prior to making a significant new investment.
Definition	Agencies performing the analysis with documented results.
Standard	Increase the percentage of agencies using the Transit Economic Benefits Model prior to making a significant new investment.
Status	21.8 percent of the agencies had run the Transit Economic Benefits Model and obtained documented results. None had used the model to make a significant investment decision although 6 systems had used it as part of a millage campaign.
AIM 15 Ensure coordination with nonprofit and social service agencies, the private sector, and educational institutions to enhance access to service.	
Measure	Percent of agencies that conduct formal meetings with stakeholders.
Definition	A formal meeting is one that is scheduled in advance.
Standard	100 percent of agencies conduct at least one stakeholder meeting annually.
Status	39.7 percent of agencies had conducted a formal stakeholders meeting during the reporting period.
AIM 16 Encourage/seek private investment.	
Measure	Number of private entities investing in transit.
Definition	Any financial or in-kind investment from a private entity.
Standard	Increase the number of private investments annually.
Status	25.6 percent of agencies indicated one or more private entities had invested in their agency. Further clarification of these numbers indicated a significant number of responses were in error and the data could not be validated.

The measure for AIM 6, implement ITS/Technology projects to improve efficiency, reliability, and customer satisfaction, was percent of systems that have an ITS/Technology plan and are making progress toward implementation. The measure as defined by the steering committee was to increase annually the number of systems with an ITS/Technology plan and that are working toward implementation. The data collected indicated that 23.1 percent of Michigan's 78 transit systems had an ITS/technology plan and of those, 83.3 percent had implemented some part of the plan during FY 2011.

AIM 7, examine and structure service to provide maximum mobility relative to changing demographics and trip generator locations, is to be measured by the percent of systems that have completed a documented service assessment in the past year. The standard is 100 percent of the systems performing a documented service assessment annually. The survey results indicated 19.1 percent of agencies had completed a documented service assessment during the reporting period. This could be an area where the standard has been set too high. A service assessment may be needed only every other year or even every three years. In rural areas especially, demographics and trip generator locations typically don't change on an annual basis. To facilitate service assessments, MDOT could develop a template for use by the agencies so they could easily conduct their own service assessments.

The measure for AIM 8, assess customer satisfaction (minimum level), is the percent of systems that have a documented process to accept and address customer input. The standard was 100 percent of systems in compliance. Of the 78 systems, 53.8 percent had a formal (written) procedure to accept and address customer input. All systems accepted customer input in some form. The way to achieve 100 percent compliance is to have all systems document how they accept and address customer input.

AIM 9, assess customer satisfaction (high level) is to be measured by the percent of systems that conduct a customer satisfaction survey at least every three years. The standard is 100 percent of systems in compliance. From the survey data, as of the FY 2011 reporting, 35.9 percent of systems had conducted a customer satisfaction survey in the past three years. MDOT could assist the systems by providing a survey template and guidance on how to conduct, tabulate and analyze a survey.

The measure for AIM 10, Expand/improve existing service is measured by the change in annual revenue miles and annual revenue hours of service. The standard is an increase in both measures from the previous year. Both of these measures are collected by MDOT through PTMS. From FY 2010 to FY 2011, revenue miles decreased and revenue hours increased. The increase in one indicator can still be associated with an increase in services provided.

The measure for AIM 11, increase coordination of transportation options is measured by the percent of agencies that participated in at least one formal meeting each year with other providers to discuss local coordination that includes other forms of transportation. The standard is 100 percent of agencies should participate in at least one meeting annually. Of the 78 agencies, 60.3 percent participated in a formal meeting with other transportation providers. This number may go up just by asking the question annually and getting transit managers to think coordination meetings are important. MDOT could also send out email reminders quarterly reminding managers that they should schedule a coordination meeting.

AIM 12, provide efficient and effective public transportation services through a range of agency determined performance measures, is to be measured by the percent of agencies that have documented performance measurement systems. The standard is 100 percent of agencies should have a documented performance measurement system. During FY 2011, 82.1 percent of agencies reported having a documented performance measurement system. MDOT could provide some assistance to agencies on suggested performance measures or a template they could use to enter data and calculate performance measures as a means of increasing the number of agencies that have performance measurement systems.

AIM 13, maximize the statewide benefit/cost of public transit, is measured by running the Transit Economic Benefits Model. That standard is a positive statewide benefit /cost ration. MDOT will run the model and calculate the ratio.

AIM 14, increase the percentage of systems that used the Transit Economic Benefits Model prior to making significant new investments, is measured by the number of systems that run the model as part of the decision making process when considering a major investment. The standard is to increase the percentage of agencies using the Transit Economic Benefits Model when making new investments. In FY2011, 21.8 percent of the agencies had run the model and obtained documented results. None had used it to make a significant investment decision, but six systems had used model results during a millage campaign. Some systems ran the model to see how they compared to statewide results. MDOT may have to provide additional training or information about the model and its various uses as a means of getting more systems to use it.

The measure for AIM 15, Ensure coordination with nonprofit and social service agencies, the private sector, and educational institutions to enhance access to service, is the percent of agencies that conducted formal meetings with stakeholders. The standard established is 100 percent of agencies conduct at least one stakeholder meeting annually. During FY 2011, 39.7 percent of the agencies conducted a formal stakeholders meeting during the reporting period. These meetings, similar to meetings to coordinate with other transportation providers, may increase just by MDOT asking the question every year. The number of coordination meetings with stakeholder could also increase by MDOT sending out quarterly reminders to set meetings with stakeholders.

AIM 16, encourage/seek private investment, was measured by the number of private entities investing in transit. The standard was to increase the number of private investments annually. From the data collected for FY 2011, it appeared that 25.6 percent of the agencies indicated one or more private entities had invested in their agency. It became apparent through post-survey follow-up that many agencies did not understand the question and that the number of systems benefiting from private investments was much smaller. The private investment question of the survey should be reworded or removed for the next round of data collection.

System Condition

The overall system condition can be evaluated in terms of the progress made under the four goal areas of Michigan's State Long Range Plan. Under Goal 1, stewardship, the Michigan transit system showed increases in passengers and revenue hours. There is work to be done in the area of maintaining the fleet to attain the standard of less than 20 percent operating past the FTA specified useful life. The information collected showed that there is a need to assist systems with asset management. A consistent focus is also needed to continue to maintain the existing level of service from year-to-year.

Goal 2 is safety and security. Collision rates will be collected and compared and will most likely fluctuate from year-to-year with some years showing an increase and others showing a decline. Improving safety through a standard training plan is yet to be realized and can be tracked once a plan has been developed.

Goal 3, system improvement, has the most AIMs of any of the four goals. Some of the standards set are easily achievable with some assistance and guidance by MDOT. MDOT could require all agencies to have a documented process to accept and address customer input. MDOT can also encourage coordination by reminding providers to schedule and hold meetings. All of these measures along with conducting customer satisfaction surveys, service assessments and developing and implementing an

ITS/Technology plan will need to be compared to future years data to determine if progress is being made.

Under Goal 4, efficient and effective operations, just over 82 percent of the agencies have a documented performance measurement system and in reality, they all do in the form of annual statistics posted on MDOT's website. Coordination with stakeholders is somewhat low, but may improve as the systems are asked the question every year and the benefit of these meetings is emphasized. MDOT can also encourage stakeholder meetings through reminders. Use of the Transit Economic Benefits Model is not being maximized, but more systems may use the model as the economy improves. The fact that several systems used it as part of a millage campaign indicates that it is a valuable tool.

It is important to realize that these are goals. The transit system should be working on meeting the goals rather than at the standard in all areas. Goals are designed so that there is something to work for and achieve. The AIMs and measurements are intended to be compared from year to year to show progress and areas that need additional attention. Several years' worth of data will be required to show trends and progress.

6. Data Collection Guidance

Data collection efforts in future years will most likely be conducted by MDOT staff. It will be important to make changes as appropriate to the survey questions and then follow the methodology, data collection, and data tabulation procedures identified below.

Methodology

It is assumed that the system conditions measures data will be collected in future years using the National RTAP Dynamic Forms application. Recent conversations with RTAP staff indicate that the application will be ready for use for June 2013 data collection activities. MDOT staff will need to provide RTAP with the data collected Fiscal Year (FY) 2011, the FY 2011 questionnaire and the revised questions for FY 2012. Electronic files of the FY 2011 data are included on a CD ROM attached to this report.

Data Collection

MDOT will need to email all agencies to solicit participation as was done for FY 2011 data collection. The agencies may need to set up an account or login with RTAP. Just as was done previously, reminder notices will also need to go out to assure 100 percent participation. MDOT will have the ability to download the collected data from National RTAP.

Data Tabulation

The downloaded data from RTAP will need to be tabulated and summarized. This can be done in Microsoft Excel. A series of summary tables were developed for the FY 2011 data collection activities. These tables may be used as a template to structure future data collection activities. Electronic files for the summary data tables can be found on the CD ROM attached to this report. It is also possible that the RTAP application may have functions that summarize and report data, eliminating the need to summarize in Microsoft Excel.